Seroprevalence of SARS-CoV-2(Covid-19) antibody among blood donors in a tertiary care centre in South India

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Abstract

INTRODUCTION The novel severe acute respiratory syndrome virus 2 (SARS-CoV-2), which is responsible Coronavirus disease (COVID-19), spread worldwide from China, causing a pandemic from late December 2019. Due to the high proportion of asymptomatic or mild infections (approximately 80%), data restricted to laboratory-confirmed cases do not capture the true extent of the spread or burden of the virus, or its infection-fatality ratio. Therefore, serological detection of specific antibodies against SARS-CoV-2 can better estimate the true number of infections. The current study aims to estimate the seroprevalence of SARS-CoV-2 antibodies among the whole blood donors without any prior COVID-19 history or symptoms. **OBJECTIVE** 1. To determine seroprevalence of SARS-CoV-2 (COVID-19) antibody (IgG and IgM) among asymptomatic healthy blood donors. **METHODS** This was a cross sectional study conducted between March and July, 2021 among 300 blood donors without any prior COVID-19 history or symptoms who came to a tertiary care, multispecialty hospital in south India. Any donor who had recently travelled abroad or donors who had received COVID-19 vaccine are excluded from the study. 3 ml venous blood was drawn in EDTA tube from participants and was tested by "Access SARS CoV-2 IgG assay" and "Access SARS CoV-2 IgM assay" by UniCel DxI 800 Immunoassay analyzer (Beckman coulter). The Access SARS CoV-2 IgG assay and the Access SARS Cov-2 IgM assay detect antibodies to the Receptor Binding Domain (RBD) of the Spike Protein. Result was reported as Reactive if Signal/Cut-off (S/CO)>1.0 and non-Reactive if S/CO <1. Data was collected and entered into excel sheets and was analyzed by using the software SPSS version 25. **RESULTS** A total of 300 healthy blood donors were included. The study reported seroprevalence of 15.3% for IgG and 4.3% for IgM (95%CI) among asymptomatic whole blood donors. No significant difference was observed across age groups, diet, BMI, ABO/Rh blood type or Ayurveda/homeo immune medicine intake with respect to IgG and IgM reactivity. **CONCLUSION** 15% of blood donors were seroconverted for COVID-19 during second wave. This is a reflection of widespread seroprevalence in the adult population. Real-time seroprevalence studies will help to know the herd immunity among the blood donors which will assist in knowing the COVID-19 transmission dynamics and distribution of immunity levels at a particular point in time. **KEYWORDS** COVID-19, Seroprevalence, Blood donors.

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